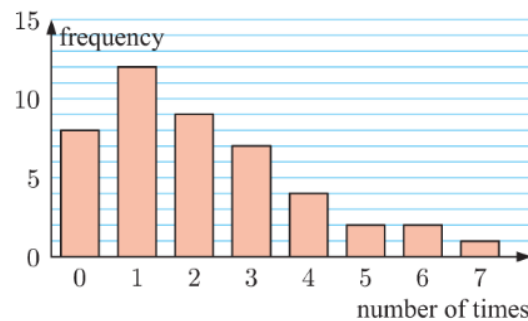


Warm Up # 3-5

1. Describe the distribution of the data represented below.
2. What type of data is it and how do you know?



Staple and turn in this week's classwork:

Warm up on top

Green WS (calculate σ)

p. 204, Investigation #5

Homework Questions are next...

Write the problem # here and I will post the worked out solution:

HW Questions: p. 303

- 4 The mean average rainfall of Claudona for August is 48 mm with a standard deviation of 6 mm. Over a 20 year period, how many times would you expect there to be less than 42 mm of rainfall during August in Claudona?

- 5 The weights of babies born at Prince Louis Maternity Hospital last year averaged 3.0 kg with a standard deviation of 200 grams. If there were 545 babies born at this hospital last year, estimate the number that weighed:

a less than 3.2 kg

b between 2.8 kg and 3.4 kg.

- 6 The height of male students in a university is normally distributed with mean 170 cm and standard deviation 8 cm.

a Find the percentage of male students whose height is:

i between 162 cm and 170 cm

ii between 170 cm and 186 cm.

b Find the probability that a randomly chosen student from this group has a height:

i between 178 cm and 186 cm

ii less than 162 cm

iii less than 154 cm

iv greater than 162 cm.

7 Suppose $X \sim N(16, 3^2)$. Find:

a $P(13 \leq X \leq 16)$

b $P(X \leq 13)$

c $P(X \geq 22)$

8 When a specific variety of radish is grown without fertiliser, the weights of the radishes produced are normally distributed with mean 40 g and standard deviation 10 g.
When the same variety of radish is grown in the same way but with fertiliser added, the weights of the radishes produced are also normally distributed, but with mean 140 g and standard deviation 40 g.

Determine the proportion of radishes grown:

a without fertiliser with weights less than 50 grams

b with fertiliser with weights less than 60 grams

c **i** with and **ii** without fertiliser with weights between 20 and 60 g

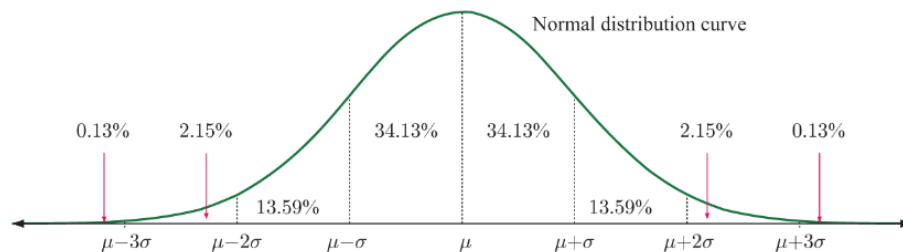
d **i** with and **ii** without fertiliser with weights greater than 60 g.

- 9 A bottle filling machine fills an average of 20 000 bottles a day with a standard deviation of 2000. Assuming that production is normally distributed and the year comprises 260 working days, calculate the approximate number of working days on which:

- a under 18 000 bottles are filled
- b over 16 000 bottles are filled
- c between 18 000 and 24 000 bottles (inclusive) are filled.



For a normal distribution with mean μ and standard deviation σ , the proportional breakdown of where the random variable could lie is shown below.



- Notice that:
- $\approx 68.26\%$ of values lie between $\mu - \sigma$ and $\mu + \sigma$
 - $\approx 95.44\%$ of values lie between $\mu - 2\sigma$ and $\mu + 2\sigma$
 - $\approx 99.74\%$ of values lie between $\mu - 3\sigma$ and $\mu + 3\sigma$.

HW: Tan Function Review WS

(Will be turned in on Monday for a score.)

Also: Read through the two handouts:

- *P2 on Gathering Data

- *Scoring Criteria for the IA